

ination of pet food, a detection method involving liquid chromatography–mass spectrometry became widely available and reliably identifies both cyanuric acid and melamine. A number of suspect foods from China tested by the FDA were found to contain melamine (see table), and more are being reported around the world each week. Furthermore, the FDA has found trace levels of melamine in several U.S. infant formulas and, as of the end of November, states that 1 part per million is permitted.

Yet it is not certain what should be done going forward. In the United States, common-sense suggestions have been posted on the Web sites of both the FDA (www.fda.gov/oc/opacom/hottopics/melamine.html) and the Centers for Disease Control and Prevention (<http://emergency.cdc.gov/agent/melamine/chinafood.asp>), and similar content is available on the WHO Web site (www.who.int/foodsafety/fs_management/infosan_events/en/index.html). The pediatric nephrology community, the American So-

ciety of Pediatric Nephrology, and the International Pediatric Nephrology Association recommend vigilance without panic ([www.aspneph.com/ASPNSStatement%20Melamine%20Oct22_cbl%20\(3\).pdf](http://www.aspneph.com/ASPNSStatement%20Melamine%20Oct22_cbl%20(3).pdf)). All these organizations suggest examining at-risk children exposed to the brands of infant formula, such as Sanlu, that are known to have been heavily contaminated by melamine.

The bottom line, however, is that nobody knows the true extent of the present epidemic or the risks to come. No more deaths have been reported since the Chinese government and the international public health community became aware of the problem. Yet the long-term health effects remain unknown.

In today's world, it is crucial to understand and deal with the global implications of foodborne diseases if problems like the melamine epidemic are to be prevented. In 2006, the WHO launched an ambitious project to estimate and understand the global burden of foodborne disease, and the Foodborne Disease Burden Epi-

demology Reference Group appears to be well on its way to achievement of its initial goals. In addition, the group will be developing much-needed user-friendly tools so that outbreaks, be they due to organisms or chemical substances, can be studied more rapidly and the causes identified, reported, and eliminated.

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Culture Shock — Patient as Icon, Icon as Patient

Abraham Verghese, M.D.

On my first day as an attending physician in a new hospital, I found my house staff and students in the team room, a snug bunker filled with glowing monitors. Instead of sitting down to hear about the patients, I suggested we head out to see them. My team came willingly, though they probably felt that everything

I would need to get up to speed on our patients — the necessary images, the laboratory results — was right there in the team room. From my perspective, the most crucial element wasn't.

For the next few weeks, I ensured that we spent as little time as possible in the bunker. These were excellent residents who cared

enormously about patients' welfare. They enjoyed being shown common findings — white nails of liver disease, an accessory nipple, Dupuytren's contracture, parotid enlargement, spider angiomas, café au lait spots, the paradoxical splitting of the second heart sound in left bundle-branch block, signs of pseudo-

bulbar palsy — which today are uncommonly recognized. When I stroked a patient's palm and caused a twitch of the mentalis muscle under the chin — the palmomental reflex — it was as if I were performing magic. Still, the demands of charting in the electronic medical record (EMR), moving patients through the system, and respecting work-hour limits led residents to spend an astonishing amount of time in front of the monitor; the EMR was their portal to consultative teams, the pharmacy, the laboratory, and radiology. It was meant to serve them, but at times the opposite seemed true.

This ward experience highlighted for me an evolving tension between two approaches to patients. In the first way — call it the traditional way — the body is the text, a text that is changing and must be frequently inspected, palpated, percussed, and auscultated. The scent in the room, a family member's statement contradicting what the patient says, the knobby liver, clonus, the absent nasolabial fold, the hoarse voice — a multitude of such soundings help us understand the patient, and on this foundation, data from the chart can be selectively applied. This approach helps slay “chartomas” — disease labels immortalized by being cut and pasted into every note so that by sheer repetition, a whiff of tricuspid insufficiency turns into a raging torrent.

The other way — call it the expedient way — is not formally taught, and yet residents seem to have learned it no matter where in the United States they trained. The patient is still at the center, but more as an icon for another

entity clothed in binary garments: the “iPatient.” Often, emergency room personnel have already scanned, tested, and diagnosed, so that interns meet a fully formed iPatient long before seeing the real patient. The iPatient's blood counts and emanations are tracked and trended like a Dow Jones Index, and pop-up flags remind caregivers to feed or bleed. iPatients are handily discussed (or “card-flipped”) in the bunker, while the real patients keep the beds warm and ensure that the folders bearing their names stay alive on the computer.

The problem with this chart-as-surrogate-for-the-patient approach is — to quote Alfred Korzybski, the father of general semantics — that the map is not the territory. If one eschews the skilled and repeated examination of the real patient, then simple diagnoses and new developments are overlooked, while tests, consultations, and procedures that might not be needed are ordered.¹ Every seasoned attending physician has seen examples of this error mode: distended neck veins, pedal edema, weight gain, and cardiomegaly labeled as pneumonia instead of congestive heart failure because the infiltrates on a chest x-ray were given too much weight; missed embolic lesions of endocarditis in a febrile patient; a report by the intern of “small intra-abdominal masses” that were in fact subcutaneous neurofibromas also abundant on chest, forearms, thighs — anywhere an examiner might lay a hand. The financial costs of imprecise observations that lead to unnecessary or risky investigations are not known; in a health care system in which our menu has no

prices,² we can order *filet mignon* at every meal.

Pedagogically, what is tragic about tending to the iPatient is that it can't begin to compare with the joy, excitement, intellectual pleasure, pride, disappointment, and lessons in humility that trainees might experience by learning from the real patient's body examined at the bedside. When residents don't witness the bedside-sleuth aspect of our discipline — its underlying romance and passion — they may come to view internal medicine as a trade practiced before a computer screen.

If we in academia have managed to ignore the loss of bedside skills, our patients see the deficiency easily. Patients recognize how the perfunctory bedside visit, the stethoscope placement, through clothing, on the sternum like the blessing of a potentate's scepter, differs from a skilled, hands-on exam. Rituals are about transformation, and when performed well, this ritual, at a minimum, suggests attentiveness and inspires confidence in the physician. It strengthens the patient-physician relationship and enhances the Samaritan role of doctors³ — all rarely discussed reasons why we should maintain our physical-diagnosis skills.

In my years of teaching, I've found that residents increasingly approach the patient with little expectation of discovering tangible findings. When such a finding presents itself, it is the exceptional resident who pursues and refines the observation, most being content to murmur vaguely about a murmur without describing its qualities, the effect of the Valsalva maneuver, the location of the apical impulse, the presence

of a parasternal heave, or key ancillary findings. Because the echocardiogram, magnetic resonance image (MRI), and comput-

signs are helpful, some are not,⁴ and we need continued study in this area. But recognizing erythema nodosum or decreased

College of Physicians and Surgeons requires passing a written test and then a 2-hour oral during which examiners observe the candidate at the bedside, examining his or her technique and physical diagnosis skills, with real patients in past years and now with standardized patients who may or may not have findings consistent with the clinical scenario presented to the candidate. I have no doubt that if our residents had to prepare for such a test, they would quickly develop great bedside examination skills.

Patients are handily discussed in the bunker, while the real patients keep the beds warm and ensure that the folders bearing their names stay alive on the computer.

ed tomographic scan precisely characterize anatomy, the physical exam is too often viewed as redundant. Indeed, the EMR template requires just one click to fill in, “Heart: regular rate and rhythm, no murmurs or gallops,” and it is an effort to change it. In short, bedside skills have deteriorated as the available technology has evolved.

How did we reach this state of affairs? The fault is ours as teachers of medicine. We don’t expect much from trainees at the bedside. If we did, we’d insist they carry ophthalmoscopes, tuning forks, and tendon hammers. Being the attending on a teaching service nowadays requires visiting once or twice daily, being present for procedures, and documenting everything. Senior physicians with strong bedside skills are opting out of this time-consuming duty, so residents have little exposure to them. Attendings are therefore often recently trained internists, knowledgeable about hospital-based systems, quality measures, critical pathways, and informatics — but the bedside exam may not be an area of interest or strength.

Younger physicians often argue that physical signs lack an “evidence base.” Clearly, some

breath sounds and dullness over a large pleural effusion is worthwhile in and of itself. Final-year medical students are now forced to travel to regional testing centers to take a costly “clinical skills” exam that, using actors, assesses communication, cultural sensitivity, and diagnostic reasoning — but without real patients with abnormal physical findings, it can hardly test true clinical skills. Board certification in internal medicine hinges on a multiple-choice exam; it is left to residency program directors to sign off that candidates have sufficient clinical skills. The public would be scandalized if pilots were allowed to fly without ever having been in the air with a seasoned examiner; medicine’s standards should be no lower. The few times I’ve been asked to watch my own senior residents perform a physical, I have been loath to be the person to hold them back when their skills were probably no different from those of their peers around the country. Surely this system of certifying our own residents as competent bedside clinicians is flawed. Though the oral exams of the past could be highly subjective, we might take a lesson from Canada, where becoming a Fellow of the Royal

At our institution, we’ve begun a new initiative working with our enthusiastic chief residents to build pride and satisfaction in bedside skills. Residents’ hunger for such training has been a revelation, and it perhaps reflects the fact that so many of them plan an international experience during their training and recognize their weakness in the physical exam. I truly believe that good bedside skills make residents more efficient.

We teach that physical findings should be considered biomarkers, phenotypic markers — better terms than “physical signs” (an idea suggested by Dr. Atul Butte at Stanford). An enlarged spleen, Roth’s spots, a Virchow’s node, and jugular venous distention are all biomarkers that should be factored in with the high calcium level, the abnormal MRI, and other data to arrive at a true picture of the patient. Failure to recognize these biomarkers is an oversight akin to not seeing a key laboratory value in the chart.

To teach these skills, we first identified a select group of mas-

ter clinicians. This step was easy — professionals at every institution seem to know who these physicians are. We have invited master clinicians from other institutions to round with our residents, to challenge them and demonstrate techniques. Regular bedside rounds and faculty-development sessions showcasing good bedside technique demonstrate the excitement of this approach and, we believe, will bring about cultural change.

I feel fortunate to live in this age of incredible technology, with its remarkable new ways of seeing the body. I am excited about

portable ultrasonography, for example, which allows us to instantly confirm findings at the bedside and discover the limits of our own skills. We need more of that kind of translational work — to develop the next generation of stethoscopes, ophthalmoscopes, and tendon hammers. Surely having physicians become more discerning, more comfortable, and eager to spend more time at the bedside is a good thing for patients. For the clinician, the bedside is hallowed ground, the place where fellow human beings allow us the privilege of looking at, touching, and

listening to their bodies. Our skills and discernment must be worthy of such trust.

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